

Influence of land-use on dung-associated interaction webs in an Afrotropical forest

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Use of land surrounding forest reserves can have profound effects on the structure of the adjacent forest communities, influencing the non-trophic interactions among invertebrates. These interactions, in turn, provide information about competitive effects within the community that are not provided by food web studies. Field studies of competitive interactions permit quantification of the complexity and connectedness of natural communities. Many factors can affect the structure and functioning of an interaction web and the organisms present in an ecosystem. Until now, there have been no empirical studies quantifying competitive interaction web structure in the dung community, and its potential responses to change in land use. To test for potential impacts of agricultural practices, such as cattle grazing and fire, on interaction web structure, we measured competitive interactions in dung-associated communities at Ngel Nyaki forest, Nigeria. Results show that protecting the forest edges by fencing off adjacent grassland has a positive impact on invertebrate abundance and diversity in these areas, and this has ramifications on competition in the dung community. These results underscore the vital need of understanding how non-trophic interactions are influenced by anthropogenic activity, and provide insight into how best to manage Afrotropical forest reserves.

